

DETAILED ACTION

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with David Chiou on Friday, October 17, 2008.

The application has been amended as follows:

Claim 1:

A method for determining a plurality of registration areas in a wireless communication system, wherein the wireless communication system comprises a plurality of first registration areas, and each of the first registration areas comprises at least one of a plurality of first partition units, the method comprising the steps of:

performing a registration area determining procedure according to a plurality of mobility data corresponding to the first partition units to determine a plurality of second registration areas, wherein each of the second registration areas comprises at least one of the first partition units;

comparing an overall cost of the first registration areas with an overall cost of the second registration areas;

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determining a plurality of second partition units, including a dynamic partition unit, and a plurality of mobility data corresponding to the second partition units and the dynamic partition unit according to the result of comparison, wherein at least [one of the second partition units] the dynamic partition unit is generated by combining at least two of the first partition units when the overall cost of the first registration areas is lower than or equal to the overall cost of the second registration areas, and at least [one of the second partition units] the dynamic partition unit is generated by partitioning one of the first partition units when the overall cost of the first registration areas is higher than the overall cost of the second registration areas; and

performing the registration area determining procedure according to the mobility data corresponding to the second partition units and the dynamic partition unit to determine a plurality of third registration areas, wherein each of the third registration areas comprises at least one of the second partition units, and one of the third registration areas includes the dynamic partition unit.

[End Amendment]

2. The following is an examiner's statement of reasons for allowance:

3. **Regarding Claim 1**, The closet prior art of record Lee et al., U.S. Publication No. 6,138,025 discloses a method for distributing paging load in a cellular wireless communication system and system within which such method is implemented. The prior art further discloses a plurality of location areas that are determined so that the paging load is distributed among the plurality of location areas such that a partial paging

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load respective to each cell of the multicell wireless communication system is less than a respective load limit. Boundaries of the location areas are chosen to substantially minimize registration load within the multicell wireless communication system such that the overall cost of the wireless communication system can be minimized. A graph partitioning algorithm, such as a modified KL algorithm may be used to create the location areas and set the boundaries. See Abstract.

4. Lee et al. further discloses the method where the total number of VMLA registrations are minimized while ensuring that the load on every VMLA in the service area is less than the limit. A KL graph algorithm is used to find the optimal boundary setting of the VMLAs by adjusting boundaries of the VMLAs until the optimal boundary setting is determined. Loading characteristics (mobility data) based on historical information and simulations are also used in determining the optimal boundary. See Col. 5, lines 61-66; Col. 7, lines 13-25 and Col. 11, lines 14-63.

5. Lee et al. discloses determining the "best cell", moving border cell from one of two VMLAs to the other VMLA. A determination is made as to the "best cell" and "best pair" of cells that would have the greatest positive impact and for determining balanced VMLAs. All possible beneficial combinations are considered with the optimal combination. Lee et al. goes through several iterations to meet the optimal combination, once determined, the loads for the VMLAs are determined so that the loading constraint limit is satisfied. See Col. 12, line 6-Col. 13, line 39.

6. Therefore, Lee et al. discloses a method for determining registration areas (VMLAs) based on mobility data (loading characteristics and KL graph partitioning

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algorithm) where the overall cost is minimized (lesser paging load and reducing registration loading). These registration areas are determined by finding the "best cell" and "best pair" cells for swapping that will have the greatest positive impact i.e. the loading constraint limit is satisfied.

The prior art fails to disclose wherein at least the *dynamic partition unit* is generated by *combining at least two* of the first partition units and performing the registration area determining procedure according to the mobility data corresponding to the second partition units and the *dynamic partition unit* to determine a plurality of third registration areas, wherein each of the third registration areas comprises at least one of the second partition units, and one of the third registration areas *includes the dynamic partition unit*.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHANTELL HEIBER whose telephone number is (571)272-0886. The examiner can normally be reached on Monday-Friday 9:00am-5:30pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on 571-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. H./
Examiner, Art Unit 2617
October 17, 2008

/Lester Kincaid/

Supervisory Patent Examiner, Art Unit 2617